IS 12497-5 (1988): Plastic Cartridges for Shot Guns, Part 5: Plastic Power Piston [PGD 28: Arms and Ammunition for Civilian Use]

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UDC 623·455·2/·6-242 : [678·5/·8] : 623·442·6

Indian Standard

(Reaffirmed 2003)

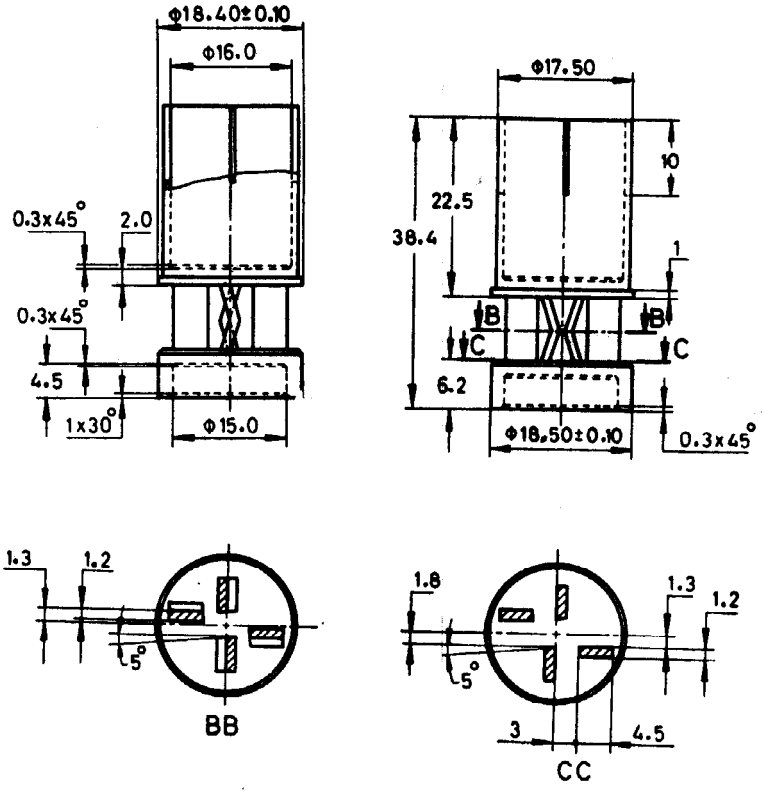
SPECIFICATION FOR PLASTIC CARTRIDGES FOR SHOT GUNS

PART 5 PLASTIC POWER PISTON

Arms and Ammunition for Civilian Use Sectional Committee, EDC 87; Panel for Shot Gun Ammunition, EDC 87/P-2 [Ref: Doc: EDC 87 (4793)]

1. Scope — Covers dimensions, material, manufacture, inspection and other test requirements and packing of plastic power piston for 12 bore plastic cartridges.

2. Dimensions — As shown in Fig. 1.



All dimensions in millimetres.

FIG. 1 DIMENSIONS OF PLASTIC POWER PISTON

3. Material — Suggested material is low density polyethylene without plasticizers having the following characteristics:

a) Density	0·920 to 0·924 g/cm³
b) Melt flow index	1·8 to 3·0 g/10 min
c) Tensile strength at break	100 kg/cm², *Min*
d) Vicat softening point	100°C, *Min*
e) Crystalline melting point	112°C, *Min*
f) Elongation at break	550 percent, *Max*
g) *p*H value of water extract	5 to 8
h) Chloride content	0·05 percent, *Max*
j) Colour	Mutually decided

Adopted 7 November 1988

Gr 2

BUREAU OF INDIAN STANDARDS
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3.1 The material shall be non-toxic and shall not react with nitrocellulose nitroglycerine propellant and gun powder during long storage.

4. Method of Manufacture — The plastic power piston shall be manufactured from virgin LDPE granules having characteristics as mentioned above by injection moulding in highly finished moulds having facilities for gas escape. The finished components shall be free from fins, seam lines, blow holes, warps, etc, by carefully removing the runner and there shall not be any shrinkage mark on the component. Wherever multicavity moulds are used, a serial number may be given for each cavity so that if a bad job is produced it will be possible to identify the defective cavity. The manufacturer is advised to incorporate an identification mark of their product in their own interest.

5. Inspection — The supplier shall ensure the quality of the product by checking samples from the continuous production and shall not keep any dimension or characteristic to lower level.

5.1 On submission of the bulk, the consignee shall do the sampling inspection as specified in IS : 2500 (Part 1)-1978 'Sampling inspection tables: Part 1 Inspection by attributes and by count of defects (*first revision*)' for dimensional and visual parameters with AQL as:

Critical	0
Major	0·65
Minor	1·5

5.2 *Chemical Analysis* — Shall be done to ensure that no additive material shall be used along with basic material which will contain chlorine or chloride compounds or which will affect the natural nature of the basic material.

5.3 *Defects Classification*

Nature of Defect	*Critical*	*Major*	*Minor*
a) Blow hole on piston portion	@		
b) Piston diameter above or below the tolerance by 0·1 mm		@	
c) Piston diameter beyond the above classification	@		
d) Pouch internal diameter less by 0·1 to the specified			@
e) Pouch ID beyond above classification	@		
f) Pouch outer diameter more than specified			@
g) Pouch OD less than specified			@
h) Total length more or less by 0·1 mm than specified			@
j) Total length beyond above classification	@		
k) Cushioning leg length more or less by 0·1 mm than specified	@		
m) Heavy burr on the piston portion	@		
n) Pin formation	@		
p) Shrinkage			@
q) Mouth open			@

5.4 *Practical Trial* — Ten random samples from each consignment shall be taken and assembled with plastic case filled with 10 percent extra charge weight of propellant than assessed and formed into the cartridges in the normal way and subjected to proof. The recovered power pistons shall not show any crack leg or breakage on the body. During assembly operation, there shall not be any difficulty in the assembly of power piston.

5.5 Ten random samples from each consignment shall be taken and assembled with the plastic case filled with the normal assessed charge weight of propellant and formed into the cartridge in the normal way and subjected to the proof in a full choked barrel. The average accuracy of this 10 cartridges at 27·4 m within the circle of 76·2 cm diameter shall not be less than 90 percent and no individual accuracy shall be less than 85 percent.

6. General Requirements — Shall conform to IS : 12497 (Part 1)-1988 'Plastic cartridges for shot guns: Part 1 General requirements'.

7. **Marking** — Each box shall be marked with the details as given below:

Nomenclature and S. O. No. :

Quantity :

Weight :

From :

To :

8. **Packing** — Packing shall be done in suitable and laminated boxes. Such 4 or 6 boxes shall be crated and tape bonded, weight not exceeding 35 kg. The joining flaps of the corrugated boxes shall be fastened with adhesive cotton/plastic tape The quantity in each box shall be decided mutually by the consigner and the consignee.

EXPLANATORY NOTE

This standard is being issued in the following parts, Part 1 covering general requirements for shot gun plastic cartridges and subsequent parts covering the plastic components:

Part 1 General requirements

Part 2 Blank cartridges

Part 3 Plastic body tube

Part 4 Plastic base wad

Part 5 Plastic power piston

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